COMPLETED PROJECT REPORT

Project Title: *Sallmonella*/Mammalian-microsome plate incorporation mutagenicity assay

Research Agency: National Wildlife Research Center

Principal Investigator: R. San

Budget: $1,890

Background:

This study was conducted to satisfy a request by the U. S. Environmental Protection Agency to provide data on the mutagenic potential of zinc phosphide. These data are required to maintain registration of the zinc phosphide baits in California.

Objectives:

The purpose of this study was to evaluate the mutagenic potential of zinc phosphide (or its metabolites) by measuring its ability to induce back mutations at selected loci of several strains of *Salmonella typhimurium* in the presence and absence of S9 activation.

Summary:

The test article, znc phosphide (technical), was tested in the Salmonella Mutagenicity Assay using tester strains TA98, TA100, TA1535, TA1537 and TA1538 in the presence and absence of Aroclor-induced rat liver S9. The assay was performed in two phases using the plate incorporation method. The first phase, the dose range-finding study, was used to establish the dose range for the mutagenicity assay. The second phase, the mutagenicity assay, was used to evaluate the mutagenicity of the test article.

In the dose range-finding study, the maximum dose tested was 5000 ug per plate. This dose, limited by the protocol, was delivered to the test system as a suspension in dimethylsulfoxide (DMSO). The results of the dose range-finding study indicate that precipitate and toxicity were observed. Therefore, the maximum dose that was plated in the mutagenicity assay was 5000 ug per plate.

In the mutagenicity assay, no positive responses were observed with any of the tester strains in the presence and absence of Aroclor-induced rat liver S9. In addition, precipitate but no appreciable toxicity was observed. The overall evaluation and dose ranges tested are as follows: SEE CHART IN STUDY.

In conclusion, the results indicate that under the conditions of this study, test article Zinc phosphide (technical) (MA# TD102) did not cause a positive response in the Salmonella / Mammalian - Microsome Plate Incorporation Mutagenicity Assay.